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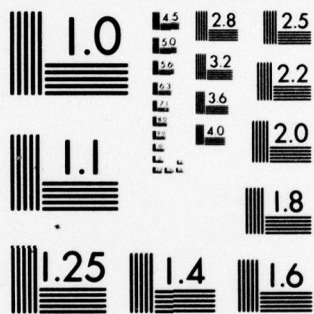
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MYOCARDIAL EFFECTS OF SHOCK

Final Report

July 1973

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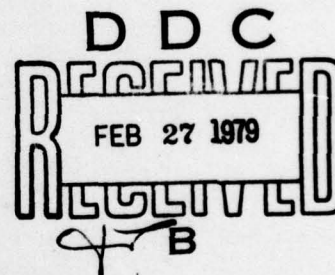
Lester Williams, Jr., M.D.

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Principal Investigator: Lester F. Williams, Jr., M.D.

Background material for the original proposal indicated that one of the pathogenic considerations in shock was a specific humoral factor responsible for myocardial depression (1,2,3,4,5,6). This myocardial depression factor (MDH) was found to originate in ischemic gut; consequently the project focused upon the relative relationship between ischemic intestine and myocardial depressant activity. The factor was never biologically identified in our studies but it was characterized as a small molecular weight (MW 800-1000) peptide that was found in portal vein blood prior to its appearance in systemic blood although it could be measured by bioassay in both locations (7,8). We also identified that this agent had no specific vaso-active properties. Because of difficulty in quantitating the degree of intestinal ischemia, its physiological significance and the production of the systemic effect, a series of studies were conducted. These documented: (a) significant impairment in bidirectional flow of fluid and electrolyte abnormalities in the presence of intestinal ischemia (9,10); (b) although autoregulation and autoregulatory escape could be well documented even in conditions of low pressure and after drug manipulation, these normal physiologic phenomena did not appear to be maintained when intestinal ischemia was extensive (11); (c) by the use of the tetrazolium assay for describing the degree of disruption and monitoring of mucosal and serosal pH, one could predict the degree of intestinal ischemia that had been induced by interruption of the blood supply and thus potentially the viability of the bowel (12). An additional therapeutic approach utilizing cortical steroids was studied experimentally (13). As a result of these studies, including the clinical data provided by several reviews (14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30), the diagnosis and treatment of non-occlusive mesenteric ischemia has been drastically altered from that which had been utilized during the early parts of the investigative research.

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REFERENCES

1. Williams, L.F., Anastasia, L.F., Hasiotis, C.A., et al. Non-occlusive mesenteric infarction. Amer. J. Surg. 114:376, 1967.
2. Ibid. Experimental nonocclusive mesenteric ischemia. Therapeutic observations. Amer. J. Surg. 115:82, 1967.
3. Ibid. Experimental nonocclusive mesenteric ischemia. Physiological and anatomic observations. Arch. Surg. 96:987, 1968.
4. Williams, L.F., Kim, J.P., Polansky, B.J., Wittemberg, J., and Byrne, J.J. Nonocclusive mesenteric ischemia. In Vascular Disorders of the Intestinal Tract. ed. Boley, Schwartz, and Williams. Appleton-Century-Crofts, 1971. p. 101.
5. Cahill, J.M., Daley, B.D.T., McNary, W.F., Williams, L.F., and Byrne, J.J. Pulmonary effect of mesenteric ischemia. In Vascular Disorders of the Intestinal Tract. ed. Boley, Schwartz, and Williams. Appleton-Century-Crofts, 1971. p. 367.
6. Williams, L.F. and Grindlinger, G. Hemodynamic effects of mesenteric ischemia. In Vascular Disorders of the Intestinal Tract. ed. Boley, Schwartz, and Williams. Appleton-Century-Crofts, 1971. p.52.
7. Williams, L.F., Goldberg, A.H., Polansky, B.J., and Byrne, J.J. Myocardial effects of intestinal ischemia. J. Surg. Res. 9:319, 1969.
8. Ibid. Myocardial effects of acute intestinal ischemia. Surg. 66:138, 1969.
9. Williams, L.F. Intestinal electrolyte transport. Surg. Forum 18:321, 1967.
10. Williams, L.F. and Davies, M.W. In vivo measurement of the three compartmental components of intestinal transport of Na and K. Red. Proced. 28:324, 1969.
11. Beardsworth, D. and Williams, L.F. Autoregulatory escape of the mesenteric circulation during acute low flow states. Clinical Research 21:961, 1973.
12. Katz, S., Wahab, A., Murray, W., and Williams, L.F. New parameters of viability in ischemic bowel disease. Amer. J. Surg. 127:136, 1974.
13. Katz, S. and Williams, L.F. A new treatment for ischemic bowel disease: Steroid delivery via retrograde venous route. 1977 (To be published).
14. Polansky, B.J., Berger, R.L., Goldberg, A.H., and Williams, L.F. Non-occlusive mesenteric infarction: A contraindication to prophylactic digitalization. Circulation 189:41, 1970.
15. Williams, L.F. Vascular insufficiency of the intestines. Gastroenterology 61:757, 1971.

Williams, Lester F.
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REFERENCES (cont.)

16. Boley, S., Schwartz, S., and Williams, L.F. Vascular Disorders of the Intestinal Tract. Appleton-Century-Crofts, New York, 1971.
17. Williams, L.F., Athanasoulis, C.A., and Wittenberg, J. Ischemic bowel disease. Postgrad. Med. 53:514, 1973.
18. Athanasoulis, C.A., Wittenberg, J., Bernstein, R., and Williams, L.F. Vasodilatory drugs in the management of non-occlusive bowel ischemia. Gastroenterology 68:146, 1975.
19. Williams, L.F., Bosniak, M.A., Wittenberg, J., Manuel, B., Grimes, E.T., and Byrne, J.J. Ischemic colitis. Am. J. Surg. 117:254, 1969.
20. Williams, L.F., Wittenberg, J., Grimes, E.T., and Byrne, J.J. Ischemic diseases of the bowel. I - Ischemia of the small bowel. Dis. Colon and Rectum 13:275, 1970.
21. Byrne, J.J., Wittenberg, J., Grimes, E.T., and Williams, L.F. Ischemic diseases of the bowel. II - Ischemic colitis. Dis. Colon and Rectum 13:283, 1970.
22. Williams, L.F. Vascular insufficiency of the bowels. In Disease-a-Month. ed. Harry F. Dowling, M.D., Chicago, Year Book Medical Publishers, 1970.
23. Williams, L.F., Bosniak, M.A., Wittenberg, J., Manuel, B., Grimes, E.T., and Byrne, J.J. Ischemic colitis. In Readings in Modern Surgery. ed. Egdahl and Mannick. Grune and Stratton, New York, p. 306-315, 1973.
24. Williams, L.F., and Wittenberg, J. Vascular insufficiency of the intestine. Viewpoints on Digestive Diseases 5:1, 1973.
25. Wittenberg, J., Athanasoulis, C.A., Shapiro, J.H., and Williams, L.F. A radiological approach to the patient with acute, extensive bowel ischemia. Radiology 106:13-24, 1973.
26. Williams, L.F., Athansoulis, C.A., and Wittenberg, J. Ischemic bowel disease. Post Graduate Medicine 53:136, 1973.
27. Wittenberg, J., Williams, L.F., and O'Sullivan, P. Ischemic colitis as a late consequence of abdomino-perineal colonic resection. Gastroenterology 69:1321, 1975.
28. Wittenberg, J., Athansoulis, C.A., Williams, L.F., Paredes, S., and O'Sullivan, P. Ischemic colitis Radiology and Pathophysiology. Radiology 123:287, 1975.
29. Williams, L.F., and Wittenberg, J. Ischemic colitis. A clinically useful diagnosis, but is it ischemic? Ann. Surg. 182:439, 1975.
30. Williams, L.F., and Wittenberg, J. Mesenteric vascular disease: Pathogenesis and clinical settings. In Gastrointestinal Emergencies. ed. Clearfield. Grune and Stratton, New York, 1975.

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